

Fiscal Year (FY) 2017 CWA § 319(h) Grant DRAFT Scope of Work Summary

Upper San Marcos River Watershed Protection Plan Implementation

Submitted by Texas State University,
The Meadows Center for Water and the Environment

Project Tasks:

- 1. Project Administration**
- 2. Quality Assurance**
- 3. Demonstration and Water Quality Protection Best Management Practices**
- 4. Education and Outreach Efforts**
- 5. Analysis of Ordinances, Codes, and Regulations Impacting Water Quality**
- 6. Coordination of Water Quality Monitoring Activities**
- 7. Final Report**

The Upper San Marcos Watershed Protection Plan (WPP) is currently being completed and will be submitted to TCEQ for final review in Spring of 2017. The WPP addresses the previously listed impairment (5c) for total dissolved solids (TDS), as well as E. coli, nutrients, sediment and other pollutants associated with future growth and development. The stakeholders selected a suite of best management practices (BMPs) to mitigate current, as well as future water quality impairments in the watershed. A subset of the BMPs were prioritized for immediate implementation. The first Implementation Phase will include coordination of partner water quality monitoring efforts, demonstration projects/BMPs, education and outreach activities, and potential improvements to water quality protection ordinances. Milestones will be used to track the WPP implementation progress in years 1 and 2.

Background Information:

The Upper San Marcos River segment (Segment 1814) is 4.5 miles long and extends from Spring Lake to its confluence with the Blanco River. The River is primarily spring-fed and receives periodic inputs of stormflow from four major tributaries. This segment of the river is classified for contact recreation, exceptional aquatic life use, drinking water supply for downstream users, and is home to five federally listed endangered species. The City of San Marcos and Texas State University have seen unprecedented growth over the past decade. Growth in the watershed and surrounding area is rapidly changing land use, putting pressure on surface water quality and groundwater resources. Sampling data show that water quality in Spring Lake and the Upper San Marcos River decline after storm flow events, especially with regard to total suspended solids (TSS) and nutrients. Elevated levels of bacteria in the river and its tributaries are also associated with stormflow.

In 2010, the Upper San Marcos River was cited on TCEQ's 303(d) list of impaired waterways for exceeding TDS water quality standards. Several other pollutants have also been identified as a concern by stakeholders in the watershed. Because the Upper San Marcos River is spring-fed and has exceptional water quality, stakeholders identified target levels that are more stringent than the state standards and screening levels in order to protect the river. These water quality targets are part of the Upper San Marcos River WPP. The WPP, known locally as the San Marcos Watershed Initiative (SMWI), addresses TDS, E. coli, nutrients, sediment, and other pollutants associated with future growth and development.

This WPP is unique in that it was developed in coordination with several other significant watershed-level water quality protection efforts, including a regional Habitat Conservation Plan, City- and University-led Water Quality Protection Plan, City-led Comprehensive Watershed Master Plan and City and University MS4 permitting process. The SMWI Stakeholders worked together to weave these efforts into a holistic management plan to restore and protect water quality in the Upper San Marcos River, complete with long term technical implementation schedules, coordinated educational efforts, and funding strategies. These interwoven initiatives will ensure funding and support for implementation of the WPP. Stakeholders selected a suite of structural and non-structural BMPs to mitigate current and future potential water quality impairments in the watershed. A subset of these BMPs was prioritized for immediate implementation, while others will be implemented over a number of years, as required to mitigate nonpoint source pollution from future development and other activities in the watershed.

General Project Description:

The SMWI began in 2012 as a multi-year process of research and information gathering with the end goal of implementing a community-approved and federally-accepted WPP for the Upper San Marcos River. The Meadows Center for Water and the Environment and SMWI stakeholders compiled and collected relevant data, identified potential sources of nonpoint source pollution and modeled water quality for existing and predicted future land use conditions. This information was used to prioritize potential locations for implementing selected BMPs over time to preserve water quality (TDS, TSS, nutrients and bacteria) throughout the watershed including:

- Structural BMPs for new developments and retrofits for existing development (Task 3)
- Demonstration projects to encourage adoption of water quality protection practices (Task 3)
- Education and Outreach Strategies (Task 4)

- Analysis and improvement of Codes & Regulations impacting water quality (Task 5)
- Information gathering to address remaining data gaps (Task 6)

The SMWI stakeholders selected a suite of BMPs to mitigate future potential water quality impairments in the watershed, a subset of these BMPs was prioritized for immediate implementation. The first Implementation Phase will include functional demonstration projects/BMPs, education and outreach activities, review of water quality protection ordinances, and coordination of water quality monitoring activities. These efforts will lead to a modest reduction in NPS pollution (and likely a corresponding improvement in instream concentrations of pollutants) but, more importantly, they will serve as demonstrations, pilots and educational resources to ensure that the WPP is fully implemented in the coming years. The Stakeholder Committee will play an active role in education and outreach, as well as in determining if the WPP implementation is successful, through the tracking of milestones and objectives.

BMPs installed during Implementation Phase I will serve as demonstrations highlighting the effectiveness of BMPs to water resource managers, community leaders, developers, and citizens. Demonstrations will include preventative, stormwater and LID measures, and will provide critical cost and pollution reduction information to the City and University regarding future implementation of additional management measures. Educational signage, websites, materials, and reports will be coupled with rain gardens, green channel conversions, pervious pavements/walkways, and other BMP demonstrations outside this funding request to provide educational information. Monitoring will assess the efficacy of these BMPs at removing pollutants and will provide information to help determine the number, type, and siting of future BMPs. Through the HCP, the City is committed to spending \$100,000 annually on water quality and habitat protection measures that parallel WPP activities.

During implementation of the WPP, new and existing education and outreach efforts will be coordinated among the WPP and its partners. WPP efforts will be aligned with educational resources and activities associated with the regional Habitat Conservation Plan, City and University MS4s, and City Water Quality Protection Plan (WQPP) to ensure that preserving water quality in the Upper San Marcos River is a common theme throughout the watershed. Utilizing and expanding upon the existing education and outreach framework will accomplish the WPP goal of significantly increased awareness of watershed pollution and avoids duplication and expense. Specific activities include community workshops, watershed tours, and other outreach efforts and will result in increased awareness of NPS issues and prevention of citizens, City, County, University staff, tourists, visitors, and students.

Because this is an increasingly urbanizing watershed, a review of existing and newly adopted ordinances will assist the City and County to quantify the effectiveness of ordinances pertaining to water quality and complete ongoing revisions of land development codes. Project partners and SMWI Stakeholders will work with City and County staff to interpret the findings of this comprehensive assessment and to entertain the incorporation of additional LID and green infrastructure components. A series of design workshops will be held with the development and engineering community for LID and green infrastructure application in new and re-development projects.

Monitoring and data collection undertaken during the course of this project by the City, University, groundwater district, river authority, and Texas Stream Team will be

coordinated and used to track water quality and better understand nonpoint source contributions to the river.

Non-structural management measures will also be implemented over the next two years. These efforts will be coordinated with WQPP and HCP activities, for which there are over \$100,000 in matching funds earmarked. This year, nearly \$100,000 in private funds was raised to begin preparing for this task and a final report will be issued with the completed WPP.

It is well understood by WPP stakeholders that implementing the Upper San Marcos WPP will yield the following benefits to the community and the watershed:

- Reduced nonpoint source pollution (NPS) and prevention of increases in NPS in the future.
- Demonstrated and proven BMP options that improve water quality
- Site-specific retrofits for LID and green infrastructure.
- Increased decision-making capacity to preserve water quality through local permitting, ordinances, and regulations.
- Increased accuracy of tools available for decision makers to calculate effects of future land use changes and development activities on NPS loadings.
- Additional data to adequately understand and potentially manage TDS origins in the springs and river.
- Coordinated water resources and related environmental outreach and education efforts across the watershed.
- Significant leveraging of funding to implement water quality protection strategies.

Tasks:

Task 1: Project Administration

Objective: To effectively administer, coordinate, and monitor all work performed under this project including technical and financial supervision and preparation of status reports.

Deliverables:

- QPRs
- Reimbursement Forms
- Post-Award Orientation Meeting Notes with action items
- Conference Call Meeting Notes with action items
- Coordination meeting with EPA (upon request)
- Annual Report Article and pictures (upon request)
- Contract Budget Updates
- Annual Budget Updates

Task 2: Quality Assurance

Objective: To refine, document, and implement data quality objectives (DQOs) and quality assurance/quality control (QA/QC) activities that ensure data of known and acceptable quality are generated by this project.

Deliverables:

- QAPP Planning Meeting Notes
- Draft and Final QAPPs
- QAPP Annual Reviews and Revisions
- Draft and Final QAPP Amendments

Task 3: Demonstration and Water Quality Protection BMPs

Objective: To oversee installation of demonstrable, functioning NPS pollutant control technologies which will educate the public concerning the pollution reduction benefits of management measures, LID, and green infrastructure. BMPs also will serve as pilots to determine accurate NPS reductions on City of San Marcos and Texas State University Properties. Informational signage at each BMP will include information about the watershed, NPS, water quality threats, City efforts and resources for the general public to explore LID, green infrastructure and watershed stewardship activities.

Deliverables:

- Report with BMP selection methodology, final BMP selection, and calculation of pollution reduction estimates.
- 2 demonstration projects/pilot BMPs on City property with signage and website (one in the downtown area and one in a high priority area of Sessom Creek)
- BMPs timeline for construction
- Notification of Bid Solicitations
- Notification when subcontractors hired
- Design and Post-Construction Reports including estimated site/area pollutant loadings and BMP load reductions report
- Notification of completion of BMPs including photo documentation
- Descriptive signs designed, manufactured and installed at each BMP site
- Integration of sites into watershed tour
- BMP information on SMWI website

Task 4: Education and Outreach Activities

Objective: To enhance the implementation of the WPP through the engagement of the community in education and outreach activities, including meetings, events, workshops, print materials, website and signage. These activities will reach broad audiences and create a greater understanding among residents of their role in protecting water quality. Efforts will also increase awareness of water quality protection and mitigation efforts at the city, county, NGO and other partner levels.

Deliverables:

- Hiring/Assignment of Watershed Coordinator
- Regularly scheduled stakeholder meetings
- Website maintained and linked with partner sites
- Utility bill stuffers, brochures, handout templates
- 1 watershed tour and accompanying materials developed
- Two water quality and NPS community workshops

Task 5: Analysis of Ordinances, Codes, and Regulations Impacting Water Quality

Objective: To conduct an analysis of the efficacy and potential pollution reduction associated with updated ordinances, codes, and regulations and/or to provide support to the City regarding ordinance implementation and assessment

Deliverables:

- Report with review of: relevant city, river authority, groundwater district and county ordinances; assessment of potential water quality and land development ordinance enhancements and newly adopted ordinances; potential reductions in NPS contributions from adoption of new ordinances
- One workshop with City and County staff to assist with ordinance implementation and tracking efforts

Task 6: Coordination of Water Quality Monitoring and Analyses/Data Acquisition

Objective: To coordinate water quality monitoring performed during this project by partners, including coordination of any routine and continuous surface water quality and stormwater monitoring. Monitoring may be performed by City of San Marcos, GBRA, Texas State University Environmental Health, Safety & Risk Management staff, Hays Trinity Groundwater Conservation District (HTGCD), HCP, and Texas Stream Team.

Deliverables:

- Annual water quality data summary reports, including analyses
- Database of acquired data

Task 7: Final Report

Objective: To produce a Final Report that summarizes all activities completed and conclusions reached during the project. The Final Report must describe project activities, and identify and discuss the extent to which project goals and purposes have been achieved, and the amount of funds actually spent on the project. The report should emphasize successes, failures, lessons learned, and should include analyses estimating the projects' water quality improvements and/or load reductions, if applicable. The Final Report must summarize all the Task Reports in either the text or as appendices.

Deliverables:

- Draft Final Report
- Address TCEQ/EPA comments
- Final Report

Budget Summary:

Category	TCEQ Reimbursable Portion (Federal)	Grantee Match Portion (Non-Federal)	Total
a. Personnel/Salary	\$45,000	\$ -	\$45,000
b. Fringe Benefits	\$12,301	\$ -	\$12,301
c. Travel	\$ -	\$-	
d. Supplies	\$6,979	\$-	\$6,979
e. Equipment	\$ -	\$-	
f. Contractual	\$97,580	\$78,747	\$176,327
g. Construction	\$-	\$-	\$0
h. Other	\$ -	\$-	
i. Subtotal: Total Direct Costs (sum a-h)	\$ 161,860	\$78,747	237,607
j. Indirect Costs	\$ 17,853	\$41,062	\$58,915
k. Other In-kind/Third Party		\$-	\$-
l. Total Project Costs (sum i, j, & k)	\$ 179,713	\$119,809	\$299,522